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Observation of the Partial Solar Eclipse of 1895 *March* 25 *at the Armagh Observatory.* By J. L. E. Dreyer, Ph.D.

With a power of 100 on the 10-inch refractor the contacts were observed as follow :—

Beginning $21^h\ 36^m\ 1^s{\cdot}2$ Greenwich M.T.
End . 22 45 43·2 Greenwich M.T.

The definition was very good, and both observations were considered satisfactory.

Armagh Observatory:
1895 *April* 9.

Notes on the Variable Stars X and W Sagittarii.

By Lieut.-Col. E. E. Markwick.

Twenty-two observations of *X Sagittarii* have been secured in 1894, which are detailed in the table following. The first column gives the calendar date, the second the Julian, the third the observed brightness, the fourth the days elapsed from last preceding maximum calculated on Dr. Chandler's data (period, 7·01185 days) and date of observation, and the fifth the difference in days between observation and calculation. This last has been arrived at by plotting the observations on a typical curve, and measuring off their horizontal distance from the curve, those to the left being negative, and right, positive. For convenience the scale has been taken at : 1 day, horizontal, =·25 inch, 1 tenth of a magnitude, vertical, =·125 inch.

I much regret that the "O—C" column for this star on p. 141, vol. liv. of the *Monthly Notices* is incorrect. In calculating the dates of maxima for 1893 the Julian figures were correctly ascertained, but unfortunately the calendar dates were wrongly taken out by one day, and hence O—C is affected on that page with an error of one day. I have now carefully revised the figures, and the following are the results, compared with last year's observations :

X Sagittarii.	No. of Obs.	Sum of positive residuals.	Sum of Negative residuals.
1893	40	7·2	22·8
1894	22	1·8	16·2

If my observations are reliable, these figures would appear to indicate that on the whole the period is a trifle too long, and wants bringing back a very little.

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X Sagittarii.

Date. 1894.	Julian, 2 410,000^{d} +	Observed brightness.	After Max. *d.*	O – C. *d.*
	d			
Aug. 20·40	3061·40	5·7	4·81	–0·8
23·43	3064·43	5·7	0·83	–2·6
25·38	3066·38	5·7	2·78	–0·8
26·38	3067·38	5·5	3·78	+0·6
27·32	3068·32	5·1	4·72	–1·5
27·37	3068·37	5·7	4·77	–0·9
28·38	3069·38	5·1	5·78	–0·4
Sept. 4·39	3076·39	5·5	5·77	–0·1
20·38	3092·38	5·2	0·73	–1·8
21·32	3093·32	5·3	1·67	–1·1
22·32	3094·32	5·4	2·67	–0·3
22·38	3094·38	5·5	2·73	–0·4
24·32	3096·32	5·6	4·67	–1·1
25·32	3097·32	5·7	5·67	0·0
25·37	3097·37	5·4	5·72	–0·2
26·31	3098·31	4·8	6·66	+0·2
29·30	3101·30	5·5	2·64	–0·5
Oct. 1·31	3103·31	5·6	4·65	–1·1
2·33	3104·33	5·9	5·67	+0·4
4·31	3106·31	5·6	0·64	–2·0
21·29	3123·29	5·7	3·60	+0·1
27·29	3129·29	5·0	2·58	+0·5

W Sagittarii.—The observations follow, arranged in the same way as those of the preceding star. I have also recomputed the observations for 1893, using Dr. Chandler's period, 7·59460 days. The results come out :

	No. of Observations.	Sum of positive residuals.	Sum of negative residuals.
1893	43	10·0	14·5
1894	26	5·1	12·5

The negative residuals in 1894 might be reduced by 2·9, by the omission of an observation on October 31, which was unreliable owing to the low altitude of the star. On the whole I do not think that the observations of 1894 are sufficiently numerous for any correction to the period to be deduced with any certainty. If the negative ones increased systematically in the future, of course the period adopted would be a little too large, but seeing that a much larger number of observations was obtained in 1893, and that the positive and negative residuals

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then came out more nearly equal, it would not appear that any correction to the period is necessary at present.

The observations were made with a binocular, magnifying about five times. *W* was usually compared with 14 (U.A.) of same constellation, and *X* with F 4 *Sagittarii.*

W Sagittarii.

Date. 1894.	Julian, 2 410,000^d+	Observed brightness.	After Max. *d.*	O−C. *d.*
	d			
Aug. 20·40	3061·40	5·6	4·81	−0·7
23·43	3064·43	5·1	0·24	−1·5
25·39	3066·39	5·45	2·20	−0·5
26·38	3067·38	5·5	3·19	+0·2
26·43	3067·43	5·5	3·24	+0·2
27·32	3068·32	5·8	4·13	−0·4
27·37	3068·37	5·8	4·18	−0·4
28·38	3069·38	5·5	5·19	−0·6
Sept. 4·39	3076·39	5·8	4·61	+0·2
16·32	3088·32	5·0	1·35	0·0
20·38	3092·38	5·8	5·41	+0·9
21·32	3093·32	4·9	6·35	−0·5
22·32	3094·32	5·2	7·35	+1·1
22·38	3094·38	5·1	7·41	+1·0
24·32	3096·32	5·1	1·76	0·0
25·32	3097·32	5·5	2·76	−0·2
25·37	3097·37	5·5	2·81	−0·2
26·31	3098·31	5·9	3·75	−0·8
29·30	3101·30	5·0	6·74	+0·1
Oct. 1·31	3103·31	5·3	1·15	−1·2
2·32	3104·32	5·55	2·16	−1·0
4·31	3106·31	5·7	4·15	+0·5
21·29	3123·29	5·6	5·94	+0·4
24·30	3126·30	5·5	1·36	−1·6
27·29	3129·29	5·75	4·35	+0·5
31·30	3133·30	5·7	0·76	−2·9

Gibraltar :
1895 *February.*

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η Cassiopeiæ. By Thomas Lewis.

In the *Monthly Notices*, vol. lv. 1, 1894 November, in my remarks on the orbit of *η Cassiopeiæ*, on page 20, "the combined mass is 3·54" should read "the combined mass is 1·69."

I take this opportunity of sending an extract from a letter received from Mr. Hermann S. Davis, Columbia College, New York, at the same time remarking that the parallaxes used were derived from Professor Pritchard's list. "I have only recently completed a determination of parallax for this star from Rutherfurd photograph measures, using six pairs of comparison stars, the result being

$$\pi = +0''\cdot443 \pm ''\cdot043.$$

Referring to Socoloff's reduction of Schweizer's observations (*Annales de l'Observatoire de Moscou*, vol. iii. part 2), I find that the values of π given there are

$$+0''\cdot3743 \pm ''\cdot0723 \text{ in distance}$$

and

$$+0''\cdot1386 \pm ''\cdot0849 \text{ in position,}$$

whereas you have 0″·202 and 0″·139 respectively in your article. The former value is obtained by assuming that the negative sign of the coefficient k, on page 88 (*Annales*), is a misprint for +.

"If, however, we adopt the author's own interpretation, we get 0″·374, as given on page 89 (*Annales*)."

With this corrected value and Mr. Davis's new result, the mean parallax of *η Cassiopeiæ* is 0″·285.

1895 *March* 30.

Equatorial Comparisons of Jupiter and 1 *Geminorum,* 1895 *January* 5 *and* 10. By John Tebbutt.

In consequence of cloudy weather, which has prevailed here almost uninterruptedly since the beginning of the year, I only succeeded in getting comparisons of *Jupiter* and 1 *Geminorum* on two nights with the filar micrometer on the 8-inch equatorial. On January 5 I obtained twenty-four comparisons on the single thread of the micrometer, in each of which both limbs of the planet were observed, the corresponding comparisons for difference of declination being equally divided between the north and south limbs. On the 10th twenty comparisons were similarly made. The corrections for phase and refraction are in-